

2012

**FLORIDA CONFERENCE ON
RECENT ADVANCES IN ROBOTICS**

PROGRAM

May 10, 2012

Session 1: Fault Tolerance and Automotive Applications

- 09:30 “Motorcycle Accident Reconstruction Part I - Physical Models”, Oren Masory, Wade Bartlet, Bill Wright. FAU
- 09:45 “Motorcycle Accident Reconstruction Part II - Self Learning Models”, Oren Masory, Henri Payrard, Wade Bartlet, Bill Wright. FAU
- 10:00 “An Example of a Fault Tolerant Wrist Design”, Salman Siddiqui, Rodney Roberts. FSU

10:15-10:30 Coffee Break

Session 2: Medical Applications

- 10:30 “Robotic Surgery - A Review on Recent advances in Surgical Robotic Systems”, Jyotsna Dwivedi, Imad Mahgoub. FAU
- 10:45 “Design and Prototyping of an Interface Tool for Aphasic Patients”, Oren Masory, Jonathan Latapie. FAU
- 11:00 “Using neural networks to predict cardiac arrhythmias”, E. Roland Adams, Anthony Choi. Mercer
- 11:15 “A Novel Control Algorithm for Ankle-Foot Prosthesis”, Arvind Parsan, Sabri Tosunoglu. FIU
- 11:30 “A New Generation of Health Monitoring Robots”, Wuqayan Alwuqayan, Sabri Tosunolu. FIU

11:45-12:00 **Address by Dr. Mohammad Ilyas, Dean
College of Engineering and Computer Science**

12:00-12:30 **Keynote Speaker: Dr. Stephanie Carey, USF, College
of Engineering Researcher for the Center for
Assistive, Rehabilitative and Robotics Technologies
(CARRT) , Overview of the CARRT Center**

12:30-2:00 **Lunch**

Session 3: Vision, Detection and Recognition

- 2:00 “Visual Servoing Control of a 9-DoF WMRA to Perform ADL Tasks”, William G. Pence, Fabian Farelo, Redwan Alqasemi, Yu Sun, Rajib Dubey. USF
- 2:15 “A Real-Time Implementation of Vision-Based Terrain Classification”, Eric Coyle, Wendell Bates, Emmanuel G. Collins, Hongwu Wang, Dan Ding, Rory Cooper. EMBRY-RIDDLE, FSU and HERL
- 2:30 “Aspects of Simultaneous Localization and Mapping for Identification in Change Detection”, George Baltas , Tesfaye G-Michael, Rodney Roberts. FAMU-FSU

Invited Session: Naval Surface Warfare Center Panama City

- 2:45 “Advances in Seabed Change Detection for Port and Coastal Security”, Tesfaye G-Michael.
- 3:00 “Time and Frequency-Domain Features for Target Specific Recognition in Synthetic Aperture Sonar Data”, Jason C. Isaacs.
- 3:15 “Unsupervised Seabed Segmentation Using Correlation Statistics”, J. Tory Cobb, Jose Principe.
- 3:30 “Laplace-Beltrami Eigenfunction Metrics for Shape Recognition”, JHason C. Isaacs.

3:45-4:00 **Coffee Break**

Session 4: Autonomous Robots

- 4:00 “Information Gathering Autonomous Robot (IGAR)”, John Bevis, Diego Flores. FAMU-FSU
- 4:15 “GunBot: Design Concept of a Semi-Autonomous UGV with Omni-directional Mobility and Auto-Target Tracking”, Cardenas Irvin, Shao Leo, Jong-Hoon Kim. FIU
- 4:30 “ScouterBot: Design of a Low Cost Autonomous Ball-boy Robot”, Daniela Chavez Guevara, Jong-Hoon Kim. FIU
- 4:45 “Semi-autonomous Crane Prototype with Payload Stabilization”, Hershel Parmar, John Williams, Brandon Smith, Rachel Vasquez Daniel Cox. UNF
- 5:00 “Mobile Autonomous Robotic Sentry (MARS) with Facial Detection and Recognition”, Tyler M. Lovelly, Antonio Arroyo, Eric M. Schwartz. UF

5:15-5:30 Coffee Break

Session 5: Education and Support Technologies

- 5:30 “Survey of Rechargeable Batteries for Robotic Applications”, Melissa Morris, Sabri Tosunoglu. FIU
- 5:45 “State of the Art in Inductive Charging for Electronic Appliances and its Future in Transportation”, Neha Chawla, Sabri Tosunoglu. FIU
- 6:00 “Robotic Art for STEM”, Ravi Shankar, Anthony Gundel, Agnes Nemeth, Don Ploger, Steven Hecht. FAU
- 6:15 “Robotics Platform: Innovative Approach to Attract High School Students”, Anuraag Agarwal, Amit Agarwal, Ankur Agarwal. FAU

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Session 6: Applications

- 9:00 “PANTERA: Lunar Mining Excavator”, Narine Kelvin Harrylall, Ramon Garo, Janet F. Reyes, Sabri Tosunoglu. FIU
- 9:15 “Robotic Tennis Ball Collector”, Neha Chawla, Wuqayan Alwuqayan, Ahmed Faizan, Sabri Tosunoglu. FIU
- 9:30 “Design and Concept on Indoor Robotic Air Aquariums”, Lazaro Herrera, Francisco Peleato, Jong-Hoon Kim. FIU
- 9:45 “DriMix 4ics – The Drink Mixer for Alcoholics”, Robert Hartwell, Dr. A Antonio Arroyo, Eric M. Schwartz. UF

10:00 -10:15 Coffee Break

Session 7: Design, Control and Systems

- 10:15 “Throughput Specifications for Upstream Biotechnology Process Automation to Meet the Needs of Automated Drug Discovery Campaign”, A.M. Cardona and Z.S. Roth. FAU
- 10:30 “Learning Macros for Multi-Robot Manipulation Tasks”, Bennie Lewis, Gita Sukthankar. UCF
- 10:45 “Orchestration of Intelligent Ground Vehicles into a Homogeneous Swarm via the Google Cloud”, Gautam Dash, Joshua N. Weaver, A. A. Arroyo, E. M. Schwartz, Sean Wright. UF
- 11:00 “Teleoperated Interface for the Staübli TX 40 Robot”, Arnold Cassell, Thomas Trask, Dang Huynh, Daniel Cox. UNF
- 11:15 “Design of 4C Mechanisms for Pick & Place Tasks”, Pierre Larochelle. FIT
- 11:30 “Heterogeneous Collaborative Swarm of Autonomous Agents with Varying Capabilities”, Joshua N. Weaver, Gautam Dash, A. A. Arroyo, E. M. Schwartz. UF
- 11:45 “Empowering Robots via Cloud Robotics: Image Processing and Decision Making BoeBots”, Siavash Rastkar, Diego Quintero, Diego Bolivar, Sabri Tosunoglu. FIU

**12:00-12:30 Keynote Speaker: Dr. Paul Rasband, Tyco,
Smarter Dumb Nodes for Truly Distributed
Computing in Wireless Sensor Networks**